In the Claims:

1. (Thrice Amended)   A method for aligning a cloverleaf micro-gyroscope having a resonator plate elastically suspended in ~~a resonator~~ an x-y plane defining a resonator plate suspension, the resonator plate for sensing and actuation of the resonator plate rocking about the x and y axes, at least four electrodes in an electrode plane adjacent said ~~resonator~~ x-y plane, and closed loop control of the resonator plate rocking motion about the ~~drive and output~~ x and y axes, said method comprising the steps of:

detecting mechanical misalignment, K_{xy}, of ~~a sense axis of~~ said resonator plate suspension in the x-y plane ~~relative to said drive axis~~; and

~~correcting~~ nulling the effect of the mechanical misalignment of the resonator plate suspension ~~axis~~ to zero by applying an electrostatic bias adjustment ~~applied~~ to _one_ ~~an~~ electrode of said at least four electrodes ~~to produce a force in cross-axis to the electrode plane~~ to produce a cross-coupling electrostatic stiffness K^e_{xy} to cancel the mechanical misalignment, K_{xy}, caused by misalignment of the resonator plate suspension in the x-y plane.

2. (Twice Amended)   The method as claimed in claim 1 wherein said step of detecting mechanical misalignment further comprises detecting mechanical misalignment by way of quadrature signal amplitude obtained by demodulation of a signal of said ~~output~~ y axis using a signal in quadrature to ~~a drive~~ said x axis rate signal. ·

3. (Original)   The method as claimed in claim 1 further comprising the step of nulling an in-phase bias.

4. (Amended)   The method as claimed in claim 3 wherein said step of nulling an in-phase bias further comprises nulling by electronically coupling a torque component of said ~~drive~~ x axis with said ~~output~~ y axis.

5. (Thrice Amended)   A method for tuning a cloverleaf micro-gyroscope having a resonator <u>plate elastically suspended in an x-y</u> ~~in a resonator~~ plane <u>defining a resonator plate suspension, said resonator plate for sensing and actuation of the resonator plate rocking about the x and y axes</u>, at least four electrodes in an electrode plane adjacent said resonator plane, and closed loop control of ~~drive and output axes~~ <u>the resonator plate suspension in the x-y plane,</u> said method comprising the steps of:

detecting residual mistuning <u>that is a result of mechanical asymmetry</u> by way of a signal; and

correcting said residual mistuning to zero by way of <u>applying an</u> electrostatic bias adjustment ~~applied~~ to <u>one</u> ~~an~~ electrode <u>of said at least four electrodes</u> ~~to produce a force in cross axis to the electrode plane~~ <u>to produce a negative electrostatic stiffness that reduces the frequency of a higher frequency resonator vibration mode.</u>

6. (Original)   The method as claimed in claim 5 wherein said step of detecting residual mistuning further comprises detecting by way of a quadrature signal noise level.

7. (Original)   The method as claimed in claim 5 wherein said step of detecting residual mistuning further comprises detecting by way of a transfer function test signal.

8. (Thrice Amended)   A method for independently aligning and tuning a cloverleaf micro-gyroscope having a resonator plate elastically suspended in an x-y plane defining a resonator plate suspension for sensing and actuation of the resonator plate about an x-axis and a y-axis in a resonator plane, at least four electrodes in an electrode plane adjacent said x-y resonator plane, and closed loop control of the resonator plate rocking motion about the drive and output x and y axes, said method comprising the steps of:

detecting mechanical misalignment of a the resonator plate suspension in the x-y plane sense axis of said resonator relative to said drive axis; and

correcting nulling the effect of the mechanical misalignment of the resonator plate suspension in the x-y plane to zero by applying an electrostatic bias adjustment applied to an electrode of the at least four electrodes to produce a force in cross-axis to said electrode plane produce a cross-coupling electrostatic stiffness K^e_{xy} to cancel the mechanical misalignment K_{xy} arising from the misalignment of the resonator plate suspension in the x-y plane;

detecting a residual mistuning that is a result of mechanical asymmetry by way of a signal; and

correcting said residual mistuning by way of applying an electrostatic bias adjustment applied to an electrode of said at least four electrodes to produce a

~~force in cross axis to the electrode plane minimizing a tuning signal~~ <u>to produce a negative electrostatic stiffness that reduces the frequency of a higher frequency resonator vibration mode</u>.

9. (Original)   The method as claimed in claim 8 wherein said step of detecting a residual mistuning further comprises detecting a residual mistuning by way of a quadrature signal noise level.

10. (Original)   The method as claimed in claim 8 wherein said step of detecting a residual mistuning further comprises detecting a residual mistuning by way of a transfer function test signal.

11. (Original)   The method as claimed in claim 8 further comprising the step of nulling in-phase bias.

12. (Currently Amended)   The method as claimed in claim 11 wherien said step of nulling further comprises electronically coupling a torque component of said ~~drive~~ <u>x</u> axis with said ~~output~~ <u>y</u> axis.

13. (Original)   The method as claimed in claim 8 wherein said micro-gyroscope closed loop control further comprises:

using separate sensors and actuators for said step of correcting said misalignment and said step of correcting said residual mistuning.

14. Cancelled.

15. (Currently Amended)   The method as claimed in ~~clami 14~~ 8 further comprising the step of applying a bias voltage to a drive electrode on said ~~drive~~ $\underline{x}$ axis that is different from a bias voltage to another drive electrode on said ~~drive~~ $\underline{x}$ axis.

16. (Original)   The method as claimed in claim 8 further comprising the step of introducing a relative gain mismatch, $\delta_T \neq 0$, to each drive electrode on said drive axis.

17. (Original)   The method as claimed in claim 8 further comprising the step of maximizing a stiffness matrix K.

18. (Original)   The method as claimed in claim 8 wherein said step of correcting said residual mistuning to zero further comprises adjusting a total stiffness of said micro-gyroscope.